



National Park Service  
U.S. Department of the Interior

National Park of  
American Samoa

Pago Pago, AS 96799

Michael Larson  
Public Information Officer

684 633-7082 phone  
684 633-7083 fax

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## National Park of American Samoa News Release

FOR IMMEDIATE RELEASE

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### Alamea Outbreak Threatens American Samoa's Coral Reefs

PAGO PAGO, American Samoa—National Park Service divers recently killed almost 90 crown-of-thorn starfish (*Acanthaster planci*, or alamea in Samoan) offshore of Malia Mai in an effort to protect our reef from these voracious predators. Alamea are a type of starfish with up to 21 arms and covered with poisonous spines. They prey upon coral tissue, and can cause significant damage to reefs. While normally rare, alamea occasionally have population outbreaks where millions of individuals suddenly appear on the reefs. Over the last 30 years the Great Barrier Reef has lost over 50% of its coral due largely to an increase in alamea outbreaks, and is now threatened with being taken off of the list of World Heritage Sites.

Alamea have the ability to push their stomach out through their mouth, covering a coral and using digestive enzymes to break down the coral animal. After consuming the coral tissue, they move on, leaving behind the white skeleton of the dead coral reef. A single alamea can consume up to 107 square feet of living coral in a year, and will eat almost every coral species on the reef. The last time there was an alamea outbreak in American Samoa was 1977, when hungry alamea devoured over 80% of the territories coral reefs.

The reason for alamea outbreaks appears to be related to increased nutrients due to human development around high islands. Humans are now using more fertilizer and releasing more waste into the environment, and when large storms bring heavy rains these nutrients are washed into the ocean. This fuels a bloom of phytoplankton, a marine plant which alamea feed on as larvae. Since it takes three years for alamea to mature, outbreaks typically occur three years after heavy rain or storm events.

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Alamea populations are usually small with adults rarely sighted, but during outbreak years they can carpet the reefs. Alamea release tens of millions of eggs during the spawning season, but most of these starve because they can't find enough phytoplankton (a marine plant) on which to feed. The nutrient-fueled phytoplankton blooms after heavy rains provide an abundance of food for the alamea larvae, and many more survive than would otherwise.

Although we don't know what is causing the current outbreak in American Samoa, it is notable that there was a large tsunami just three years ago that would have re-suspended nutrients that had settled on the bottom.

While alamea outbreaks have occurred in the past in American Samoa, they are quite rare. Elderly fishermen interviewed by Dr. Chuck Birkeland in the 1970 recalled outbreaks in 1916 and 1932. No outbreak was recorded between 1932 and 1977, and divers reported that they would occasionally see one or two individuals on a reef. However, in late 1977 divers observed an estimated 83,000 individuals on Taema Banks. A removal program was started to try to protect the reefs, and by the end of 1978 over 480,000 individuals had been collected along the coastline. Despite these efforts, the alamea outbreak continued until 1980, when most of the coral reefs were gone and the starfish finally starved to death.

Fishermen know about the danger of stepping on an alamea and the extreme pain caused by their spines. The Samoan proverb "e fofu e le alamea le alamea," or "the cure for alamea is alamea" directs people who accidentally step on the starfish to turn it over and step on the underside. It is thought that the tube feet will suck the poison out of the wound. Doctors at the Divers Alert Network, who commonly deal with dive related accidents, suggest soaking wounds immediately in hot water. They explain that the hot water breaks down the poison injected by the starfish. Wounds also commonly become infected, and they recommend that anyone stuck by a crown of thorn should seek medical advice.

The National Park Service is collaborating with the Department of Marine and Wildlife Resources (DMWR), the National Marine Sanctuary, and the governor's Coral Reef Advisory Group to combat the recent alamea outbreak. A joint meeting was held recently to discuss methods to monitor and eradicate alamea before their population reaches levels similar to the 1977 outbreak. While surveys to date have shown alamea to be abundant between Pago Pago Harbor and Vaitogi, additional effort will be made over the next two weeks to survey the entire island for alamea. Alamea will also be

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either removed from the reefs by divers or injected with a poison that is specific to the alamea but not harmful to other marine life or humans.

The public is asked to help with this effort by reporting any alamea sightings to the DMWR Enforcement at 731-0729. Caution is also advised for anyone attempting to remove alamea from the reef. Please remember these animals are poisonous and medical attention should be obtained for any injury.

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*About the National Park of American Samoa. The national park was established in 1988 to preserve and protect the coral reefs, tropical rainforests, fruit bats, the Samoan culture, and to provide for their enjoyment by residents and visitors. National park lands and waters in Tutuila, Ta'ū, and Ofu islands are leased from villages and the American Samoa Government through a long-term agreement with the National Park Service.*

*For more information about visiting the National Park of American Samoa, call 633-7082, email [NPSA\\_Info@nps.gov](mailto:NPSA_Info@nps.gov), or go to [www.nps.gov/npsa](http://www.nps.gov/npsa). Also, visit the national park's Facebook and Twitter pages.*

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